



N O S T R U M

H I G H P E R F O R M A N C E



2.0L GM LTG Ecotec High Pressure Fuel Pump Kit Installation Guide

Standard Bore Kit - Part#: H086-0676
Big Bore Kit - Part#: H086-0684

WARNING! PLEASE FOLLOW ALL WARNINGS AND INSTRUCTIONS FOUND IN YOUR VEHICLE OWNERS MANUAL. THE FOLLOWING INSTRUCTIONS MUST BE READ AND FULLY UNDERSTOOD BEFORE BEGINNING INSTALLATION. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN VEHICLE DAMAGE, PERSONAL INJURY OR DEATH. IF THESE INSTRUCTIONS ARE NOT FULLY UNDERSTOOD, DO NOT ATTEMPT INSTALLATION.

GM LTG 2.0L ECOTEC

HIGH FLOW SMALL BORE HPFP INSTALLATION GUIDE

HIGH FLOW BIG BORE HPFP INSTALLATION GUIDE

STANDARD BORE KIT PART #: H086-0676

BIG BORE KIT PART #: H086-0684

Disassembly

Please reference your OEM service instructions for removing the factory high pressure fuel pump.

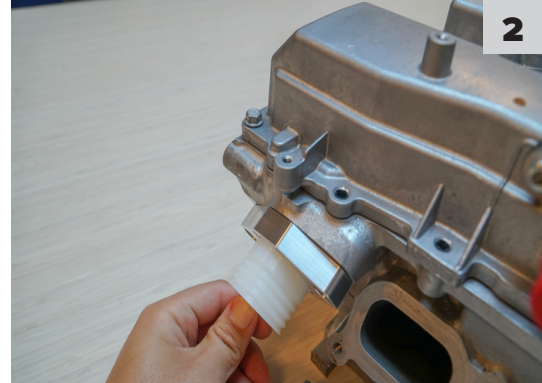
Flange Installation

1. Your kit from Nostrum includes a white plastic installation tool, the fuel pump flange, and the flange sealing O-ring (black). The first step will be to install this flange on your LTG.

2. Insert the installation tool into the pump bore on the cylinder head. Be sure to gently slide into the bore. The installation tool will align the flange and the O-ring into proper orientation and concentric alignment with the pump bore on the cylinder head. This prevents O-ring damage, pump damage, and pump installation problems. Push into the bore until the flange and O-ring are seated against the pump mounting face on the cylinder head.

TIP: Be sure to clean the cylinder head mounting surface for a clean O-ring seal to prevent possible leaks

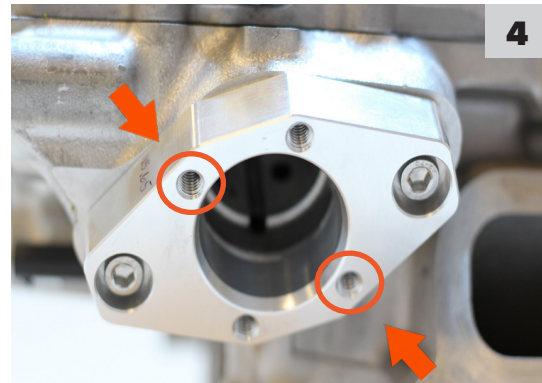
3. With the installation tool still in the bore, rotate the flange to align the flange bolt holes with the tapped holes on the cylinder head. Hand start the supplied stainless steel M6 x 25mm length bolts in each of the two bolt holes (5mm Allen key). Then proceed to screw the bolts in until bottoming. Follow your factory torque specification and torque the bolts.



TIP: Rotate the installation tool while seating the two fasteners. This will assist in preventing the installation tool from becoming trapped and difficult to remove.

4. Proceed to remove the plastic installation tool and set it aside. The flange and O-ring are now aligned for the pump installation. The flange will guide the pump to the cylinder head bore without damage to the O-ring. You should not see any O-ring deformities or flange gross miss-alignments to the cylinder head bore. You will notice 2 sets of tapped holes on your flange, make sure to use the correct ones for installing LTG HPFP.

(In orange above)



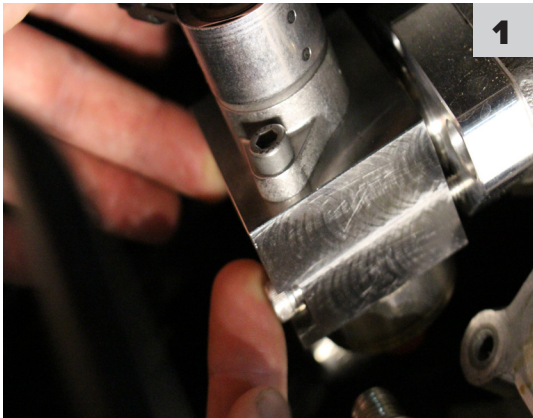
Pump Installation

1. Remove the pump assembly from packaging and check the pump O-ring (red), mating face and diameter. Ensure that they are clean and ready for installation. Place the pump in position to insert the pump into the flange main bore with the orientation shown below.

Note: On high mileage vehicles, it may be a good idea to replace the cam follower with a new OEM unit.

2. Proceed to gently insert the pump into the bore, keeping attention to the parallel alignment of the pump body diameter to the flange bore. **(It is a tight fit due to the O-ring compression.)** Push the pump in until it stops against the O-ring (red). Do not rock the pump off center of the bore excessively because you can damage the flange. You may rotate lightly to get the pump to seat into the bore.

3. Obtain the two stainless steel M6 x 45mm long Allen bolts from the kit and align the pump main body bolt holes to the threaded holes on the flange. Insert the bolts and hand start them.

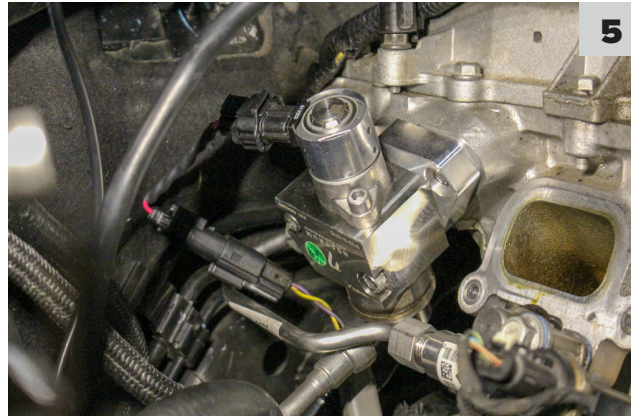


4. Push the pump deep into the flange until it seats against the flange face. Since your camshaft might not be at its base circle, you may need to gradually “walk” your pump in to load the return spring.

Alternate tightening each pump bolt by applying 2-3 rotations at a time, this will ensure the pump is installed evenly.

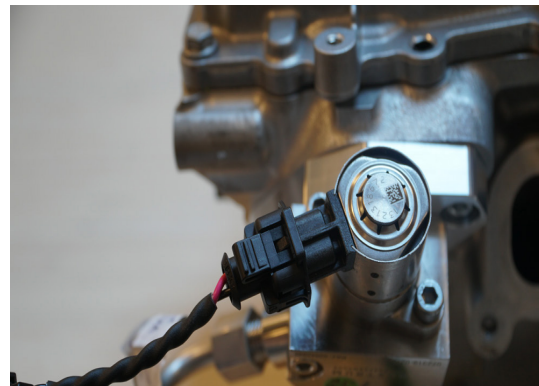
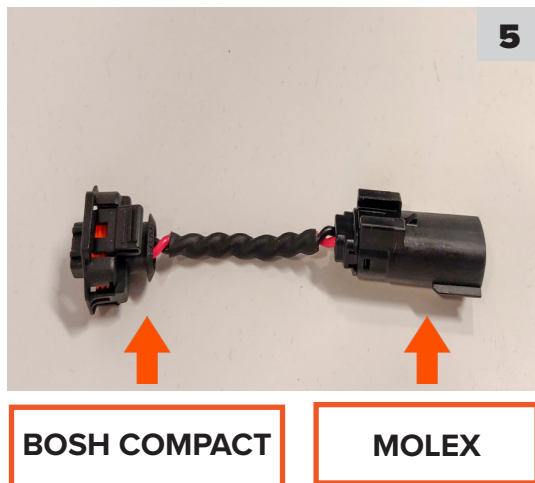


Note: DO NOT tighten one bolt completely without “walking” the pump to preload position. You will damage the flange. Proceed to secure the pump bolts to the flange. Torque to 15 lb-ft.



5. Obtain the electrical connector jumper from the kit. Plug the Molex male into the engine wire harness. Plug the Bosch Compact female to the male on the pump. Be sure, in both cases, that both connectors lock into the mating connector (you should hear a click). Check by pulling on the connectors.

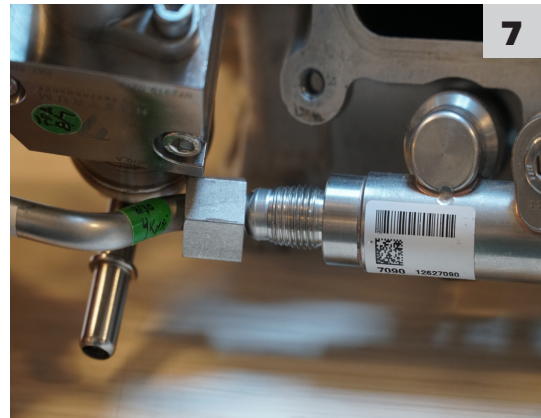
Do not pull on the wires!!!



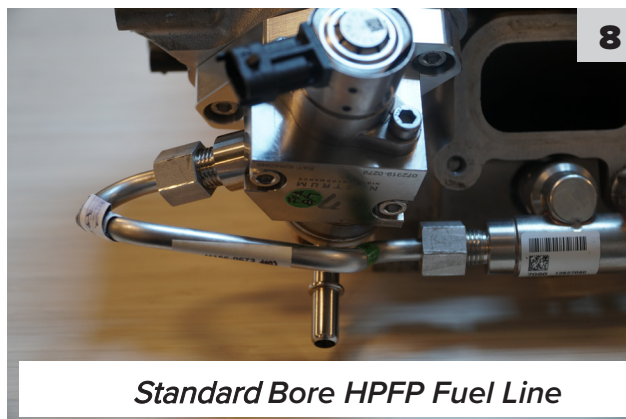
6. Obtain the high pressure hard line from the kit, it must be oriented correctly before installation. Rotate the hard line so that the U-shaped end aligns with the high pressure outlet on the HPFP.

Ensure that the spherical fitting on the hard line mates into the female cone on the fuel pump.

7. Next, ensure the spherical fitting is seated and aligned on the fuel pump side. While holding the fuel pump fitting in place, align the other end of the hard line spherical fitting to the fuel rail female cone. Do not start engaging threads on the compression nut until both spherical fittings are securely seated.



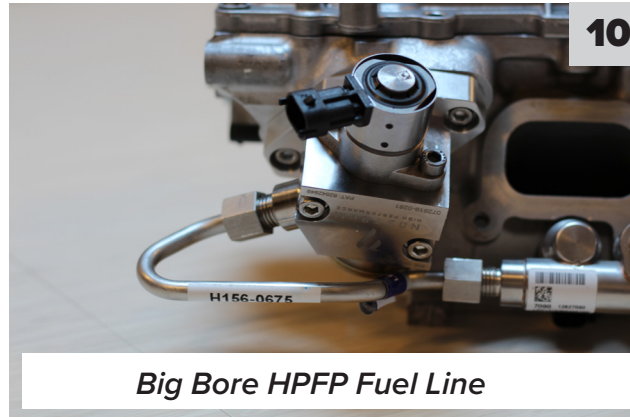
8. Thread the nut onto the fitting while continuing to hold the line in position with the spherical end seated into the female cone on center. **DO NOT USE THE NUT TO “CENTER”** the spherical tube fitting because it may damage the fitting, damage the thread, or miss-align the fitting and result in a leak. The nuts should spin freely and without resistance. If there is resistance, ensure the spherical fittings are straight and centered, and try again. Tighten compression nuts all the way until seated and secured. After both the fuel pump & fuel rail nuts are seated by hand, torque to **20 lb-ft.**



9. Attempt to move or shake the high-pressure hard line at both ends near the fittings. They should not move inside the compression nut. If they do move, remove the tube and go back to Step 7.



11. Low Pressure: Standard bore pumps have integrated **3/8"** male fitting. Reinstall your low pressure fuel line to the **3/8"** quick connect male fitting. Make sure it is secure.

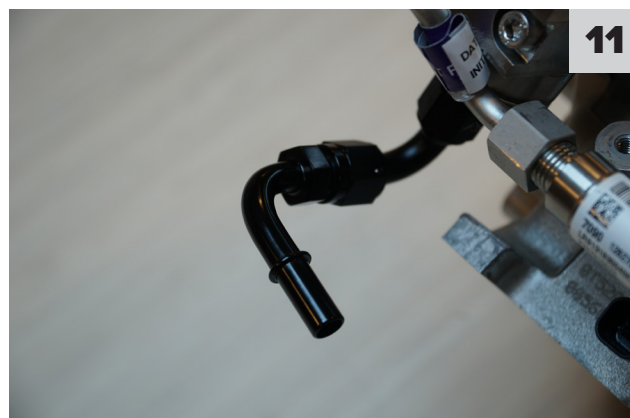


NOTE: Standard bore kits and Big Bore Kits have different High Pressure tubes and Low Pressure adapters.



*Factory **3/8"** LP QC*

11. Big bore kits are supplied with two AN fittings. These are for the low pressure fuel line connections. Install the 6AN female to 6AN female 90 degrees fitting to the pump and then the 6AN male to **3/8"** QC male.



11. Install as shown in the images below to obtain the correct orientation for routing your low pressure fuel line. Torque to 13-ft.



11. Reinstall your low pressure fuel line to the **3/8"** quick connect male fitting. Make sure it is secure.



Hardware installation is complete.

First Start-Up

1. Be sure to remove all installation tools and loose items from the engine compartment. Follow good, safe practices when working on your vehicle. Be sure to reassemble all parts and components according to your OE maintenance manual.
2. Key cycle the vehicle into the “Accessory On” position (do not go to Ignition position). The low- pressure fuel pump will activate and the low pressure side of the pump will pressurize. Check the high-pressure fuel pump and the low pressure side for leaks. If OK, proceed to step 3.
3. Key cycle to ignition and let the car attempt several start cycles. Remember that the fuel lines, pump and part of the fuel rail are filled with air, therefore this step is necessary to evacuate that air and get the system charged. If it starts, OK. If it doesn't, key off the vehicle. Check the high- pressure lines to the fuel rail, to the pump and the pump itself for leaks. If OK, proceed to step 4.
4. Key cycle one more time all the way to ignition. Engine should start-up and idle. If not, proceed with steps 2-4 again.
5. Let the car idle for a few minutes. Check for leaks on low and high-pressure portions again.
7. Installation is complete! **Time for a Tune!!**

***NOTE: a fault code may appear at the first key cycle due to the long ignition time or the low pressure in the fuel rail, both due to the air in the fuel system.
This code should self-clear after the OEM defined quantity of key cycles.***

NOTE: After driving the car and letting it cool, next day, check for fuel leaks again (from thermal expansion and contraction). Retighten fittings if needed.

For more information or specific support questions:
email support@nostrumshop.com or call 734-548-8677 (during normal business hours)

